UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/966,414 | 09/28/2001 | Srinivas Gutta | US010451 | 4362 |

24737 7590 09/19/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

| EXAMINER | |
|---|---|
| LONSBERRY, HUNTER B | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2623 | |

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**



Application Number: 09/966,414
Filing Date: September 28, 2001
Appellant(s): GUTTA ET AL.

Robert M. McDermott
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 6/26/06 appealing from the Office action mailed 7 March 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The Examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is

correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

U.S. Patent 5,790,935 to Payton.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,790,935 to Payton.

Regarding claim 1, Payton discloses a method (figures 6-7b) comprising:

receiving feedback from a first user scoring examples falling into various data-classes (column 6, lines 20-59, user rates offerings on a scale from 1-10 or comments on the item);

refining a first user's user profile associated with the first user responsively to the feedback (column 5, lines 6-20, column 6, lines 51-55, column 8, lines 37-column 9, line 13)

modifying the first user profile responsively to data from a second user profile associated with a second user (recommendations from a second similar user, column 9, lines 4-26); such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency recommendations of any other data-classes (column 9, lines 4-26, the combined scores are used to recommend programming, figure 7b, steps 166-172) so that the first user's user profile is expanded in scope according to preferences stored in the second user profile (the combination of ratings expands the scope of the user preferences, steps 166-170, column 9, lines 4-13, 49-56).

Regarding claim 2, Payton discloses that the first user's profile includes a specialized target description of favored data classes (user ratings of programs with a higher score, column 6, lines 36-40), and the step of modifying includes generalizing the specialized target description such that it encompasses at least one specialized target description of the second user's user profile (column 9, lines 4-26, the system utilizes

predictions between the first user and a second user which is similar to the first user to formulate the recommendations to the user).

Regarding claim 3, Payton discloses that the step of modifying the first user profile includes substituting at least a union of specialized descriptions between the first and second user's profiles for the specialized description of the first user's user profile (column 9, lines 4-18, the subscribers profile is recomputed by taking into account a second user's ratings).

Regarding claim 4, Payton discloses that modifying the first user profile includes substituting at least a union of specialized descriptions between the first and second user's profiles for the specialized description of the first user's user profile (column 9, lines 4-18, the subscribers profile is recomputed by taking into account a second user's ratings).

Regarding claim 5, Payton discloses a method (figures 6-7b) comprising:

receiving feedback from a first user scoring examples falling into various data-classes (column 6, lines 20-59, user rates offerings on a scale from 1-10 or comments on the item);;

refining a first user's user profile associated with the first user responsively to the feedback (column 5, lines 6-20, column 6, lines 51-55, column 8, lines 37-column 9, line 13);

selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user and (column 8, lines 50-58, column 9, lines 4-26, the combined scores are used to recommend programming, figure 7b, steps 166-172);

requesting feedback on the test-data from the first user and modifying the first user's user profile responsively to the feedback (the combination of ratings expands the scope of the user preferences, figure 7b, steps 166-170, column 9, lines 4-13, 49-56) wherein,

the selecting step includes selecting primarily test data for which the first user's user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored (column 8, lines 50-58, ratings are supplied for programs which the first user has not rated, column 9, lines 14-48, both users must have rated the same set of items, however the weighting applied to the prediction is inversely proportional to the dissimilarity of the rating, thus the data is insufficient to determine if the test data would be favored or favored due to the low weighting).

Regarding claim 6, Payton discloses that the step of selecting includes selecting only test-data which feedback incorporated in the first user profile increases a discriminating power of the first user profile (column 9, lines 49-61, as a user rates more programs the user's tastes and interests are more accurately profiled and allow for other subscribers with similar tastes to be matched up with them).

Regarding claim 8, Payton discloses that the selecting the test-data step includes filtering through a number of data choices through a set of ratings and weights for the different types of programming, by conducting a similarity comparison (column 9, lines 14-48).

Regarding claim 9, Payton discloses a data-class recommender, comprising:

a learning engine 54 (prediction filter 54, column 6, lines 1-6, column 7, line 61-column 8, line 10);

a user interface device 32 connectable to the learning engine 54 (column 6, lines 20-42, column 8, lines 37-45);

the learning engine 54 being connectable to a data source 28 containing descriptions of data selections (column 6, lines 1-11, 20-28);

the learning engine being programmed to receive through the user interface, feedback from a first user evaluating the data selections and to progressively generate a description of data selections that are favored and disfavored by the first user, thereby generating a first user profile (column 6, lines 26-44,user inputs ratings for each offering and rates them from 1-10 to indicate like and dislike);

the learning engine being further programmed to generate recommendations of data selections for the first user responsively to the first user profile (column 8, line 59-column 9, line 3);

the learning engine being further programmed to selectively generate recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user (column 9, line 4-26)

wherein

the learning engine is programmed such that the first user profile includes a narrow description defining target data selections (programs with a higher rating) and a broad description defining non-target data selections (lower ratings), the recommendations being derived from a space for selections lying between the broad and narrow descriptions (predictions may be made via a weight average of similarity between two profiles, column 9, lines 14-48).

Regarding claim 11, Payton discloses that the learning engine is further programmed to compare a level of narrowness in the narrow description to a threshold that the first user profile results in recommendations embracing a range of target data that is narrower than the threshold (column 9, lines 14-22, the learning engine determines a threshold for similarity and dissimilarity in order to make its recommendations) and the learning engine is further programmed to selectively generate recommendations of data selections for the first user responsively to the first user profile and the at least a second user profile responsively to a result of so-comparing the level with the threshold (column 9, lines 14-22, the learning engine makes its predictions/recommendations by considering profiles from other users within the threshold).

**(10) Response to Argument**

**Arguments with regards to claims 1-4:**

Appellant argues that the office action has not shown where Payton teaches modifying a first user's profile based on data in a second user's profile, fails to teach increasing the frequency of recommendation of a data class without decreasing the frequency of another data class, and expanding the scope of a first user profile according to preferences in a second user profile. Although Payton discloses that the recommendation is based on multiple users, the individual profiles are only affected by the individual user's actions at steps 160 and 162. Payton is silent with regard to how the combined scores are used to determine the recommended programming, and it is likely that, absent applicant's teachings, if one or more of Payton's users do not prefer a given data-class, the likelihood of recommending that data class will be reduced. (pages 7-8).

Regarding Appellant's arguments, the Examiner disagrees. The examiner notes that the profile is the recommendation list in conjunction with the user profile as both are an expression of a user's interests. Support for the claim limitation of "modifying the first user profile responsively to data from a second user profile associated with a second user" is found at column 9, lines 4-26. Each profile includes a number of ratings vectors (shown in figure 6, column 5, lines 6-21), with empty spaces for items which have not been rated by the user (column 8, lines 50-58), a prediction is preformed

based upon items rated by the user and at least one second user (column 9, lines 14-61), with the prediction being added to the user's profile.

Support for "increasing the frequency of recommendation of a data class without decreasing the frequency of another data class" is found at column 9, lines 4-26, figures 6, 7b, steps 166-172. A user's profile includes a recommendation list which include a mix of both previously rated programming (which the user is likely to order again, column 5, lines 15-21) and programming which the user may be interested in (column 5, lines 15-21) based upon the ratings of others. As shown in figure 6, a user's profile includes ratings for programs viewed and for programs not viewed. The user's existing ratings of programs are not adjusted, rather the existing ratings are used to find new programming rated by users with similar ratings for commonly watched programs (column 9, lines 14-26). Thus when the recommendation is created for a program, which has not been watched by the user, the existing ratings can not decrease as they are not adjusted at all.

Support for "expanding the scope of a first user profile according to preferences in a second user profile" is found at figure 7b steps 166-170, column 9, lines 4-13, 49-56. This section discloses that the ratings for programs not yet viewed by a user are given ratings based on ratings given by other users who have ranked a set of programs common with the first user. It is the new ratings for the unrated programming, which are in turn used to recommend new programming to the user, which result in the new additions to the recommendations, thereby expanding the user profile.

Therefore, Payton teaches each and every element of claim 1.

**Arguments with regards to claims 5, 6 and 8.**

Appellant argues that Payton fails to teach selecting test-data for revising a first user's profile based upon a second user's profile. Appellant argues that Payton fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine where the test-data would be favoured or disfavoured. Appellant argues that providing program recommendations is not equivalent to selecting test data for revising a user's profile. Appellant fails to see how dissimilarity of ratings is related to the first user's profile being insufficient to determine whether the test-data would be favoured or disfavoured (pages 9-10).

Payton discloses that a each subscriber upon startup, should rate a common selection of items to place him or her among other subscribers with roughly similar tastes (column 9, lines 14-61). Thus the user is grouped with users with a similar set of preferences. As discussed above, a user's profile is not modified for existing rankings, instead a user's unrated items receive ratings based upon the ratings of other users. The Examiner considers these unranked programs to be test data which is insufficient to determine whether the user would favour or disfavour them, as the user has no indicated opinion on the programs. Instead the rankings of other similar users are used to predict whether or not a user would like the programming, by utilizing various weighting schemes and determininations of subscriber similarities.

Therefore, Payton teaches each and every element of the claims.

**Arguments with regards to claims 9 and 11:**

Appellant argues that Payton fails to teach a user profile that includes a narrow description defining target data selections and a broad description defining non-target data selections. Appellant maintains that Payton's teachings of high and low ratings are independent of narrow and broad descriptions. In Appellant's invention, for example, items in either the broad or narrow description category or anywhere between, are generally rated high because they are within the "version space" of favoured items. That is, material in either the broad or narrow description categories will generally be rated higher than average. Material that is not contained in either the broad or narrow description categories will generally be rated lower than average. Assuming in argument that a correspondence between ratings and descriptions may exist, the Office actions asserted correspondence between a low rating and a broad description, and a correspondence between a high ranting and a narrow description is easily contradicted by the example of a user who likes most items and only dislikes a few, such as a user who likes everything except sports or every thing but soaps. In these cases, a low rating corresponds to a narrow description (sports, soaps) and a high rating corresponds to a broad description (everything else) (page 11).

Regarding Appellant's argument, the Examiner notes that claims 9 and 11 are silent regarding the use of a version space algorithm. Further Payton discloses that the learning engine is programmed such that the first user profile includes a narrow description defining target data selections (programs with a higher rating) and a broad description defining non-target data selections (lower ratings), the recommendations being derived from a space for selections lying between the broad and narrow descriptions (predictions may be made via a weight average of similarity between two profiles, column 9, lines 14-48). These narrow (higher rating) and broad (lower rating) selections are utilized to derive the recommendations by calculating a similarity between the profiles (column 9, lines 14-61). Additionally, the displayed list of programs displays a mix of highly rated programs by the user and recommended items (column 5, lines 6-21), the ratings being either a scale as 1-10, comments, or a positive vote (column 6, lines 36-42). The higher rated programs have a narrow appeal to a specific subset of users, while a lower rated (broader) program appeals to a more general audience.

With regard's to Appellant's example, applying Payton's ratings would result in higher numerical ratings for programming and subjects to which the user is interested (narrow) and lower numerical ratings for programming the user is less interested in (broad). As Payton teaches that the programs do receive a rating (whether explicitly provided by the user, or by a second user), the recommendations list will be populated by programming, which falls between the highest numerical rating and lowest numerical rating.

Thus, Payton teaches each and every element of claims 9 and 11.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Hunter B. Lonsberry

Conferees:

John Miller

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Christopher Grant

CHRISTOPHER GRANT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Appl. No. | : **09/966,414** |
| Applicant(s) | : **GUTTA et al.** |
| Filed | : **28 Sep 2001** |
| TC/A.U. | : **2611** |
| Examiner | : **LONSBERRY, Hunter B.** |
| Atty. Docket | : **US-010451** |

CERTIFICATE OF MAILING OR TRANSMISSION

I certify that this correspondence is being:

[ ] deposited with the U.S. Postal Service with sufficient postage as first-class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

[X] transmitted by facsimile to the U.S. Patent and Trademark Office at **571-273-8300.**

On: 26 June 2006

By: R. McDermott

Title: **INDIVIDUAL RECOMMENDER DATABASE USING PROFILES OF OTHERS**

Mail Stop: **APPEAL BRIEF - PATENTS**
Commissioner for Patents
Alexandria, VA 22313-1450

**APPEAL UNDER 37 CFR 41.37**

Sir:

This is an appeal from the decision of the Examiner dated 7 March 2006, finally rejecting claims 1-6, 8-9, and 11 of the subject application.

This paper includes (each beginning on a separate sheet):

1. **Appeal Brief, with appendices; and**
2. **Credit card authorization in the amount of $500.**

# APPEAL BRIEF

## I. REAL PARTY IN INTEREST

The above-identified application is assigned, in its entirety, to Koninklijke Philips Electronics N. V.

## II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

## III. STATUS OF CLAIMS

Claims 7 and 10 are canceled.

Claims 1-6, 8-9, and 11 are pending in the application.

Claims 1-6, 8-9, and 11 stand rejected by the Examiner under 35 U.S.C. 102(b).

These rejected claims are the subject of this appeal.

## IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection in the Office Action dated 7 March 2006.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention addresses a method and system for creating a user profile, and using that profile to provide recommendations to the user. To avoid a user getting trapped in a rut because of repetitive selections of the same material, the user's profile is expanded based on the profile of other users, preferably users having similar or related interests, such as members of the same household (Applicants' abstract). The profiles are based on examples that are graded by each user, either explicitly (FIG. 6) or implicitly (FIG. 7). Other users' profiles may also be used to guide the selection of examples for the user to grade (page 21, lines 11-16). Preferably, the profile includes a generalized space that includes everything except negative-graded examples, and a specialized space that includes only positive-graded examples. The region between these spaces will likely include material that the user will like, the likelihood increasing as one approaches the specialized space (FIG. 1; page 18, line 1 – page 19, line 4). Preferably, the expansion does not decrease the frequency of recommendation of any data class, and is effected by a union of the specialized space of the users (page 19, lines 9-17).

As claimed in independent claim 1, the invention comprises a method that includes:

receiving feedback from a first user scoring examples falling into various data-classes (page 9, line 23 – page 10, line 9);

refining a first user profile associated with the first user responsively to the feedback (page 10, lines 9-18; page 18, lines 1-12); and

modifying (FIGs. 2A-2C) the first user profile responsively to data from a second user profile associated with a second user (page 19, lines 5-9) such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency of recommendations of any other data-classes (page 19, lines 9-14), so that the first user profile is expanded in scope according to preferences stored in the second user profile (page 19, lines 14-20).

As claimed in independent claim 5, the invention comprises a method that includes:

receiving feedback from a first user scoring examples falling into various data-classes (page 9, line 23 – page 10, line 9);

refining a first user profile associated with the first user responsively to the feedback (page 10, lines 9-18; page 18, lines 1-12);

selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user (page 21, lines 11-16); and

requesting feedback on the test-data from the first user (page 21, lines 15-16)and modifying the first user profile responsively to the feedback (page 22, lines 14-16);

wherein

selecting the test-data includes selecting primarily test-data for which the first user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored (page 12, lines 17-23; page 21, lines 16-18).

As claimed in independent claim 9, the invention comprises a data-class recommender that includes (FIG. 5):

a learning engine (440; page 14, lines 12-22);

a user interface device operably coupled to the learning engine (410; page 23, lines 14-17);

the learning engine being operably coupled to a data source containing descriptions of data selections (435; page 23, lines 21-23);

the learning engine being programmed to:

receive, through the user interface device, feedback from a first user evaluating the data selections (page 8-11);

progressively generate a description of data selections that are favored and disfavored by the first user based on the feedback, thereby generating a first user profile (page 29, line 22 – page 31, line 2);

generate recommendations of data selections for the first user responsively to the first user profile (page 31, line 2-8); and

selectively generate recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user (page 12, lines 17-23; page 21, lines 16-18);

wherein

the learning engine is programmed such that the first user profile includes

a narrow description defining target data selections (170 of FIG. 1) and

a broad description defining non-target data selections (165),

the recommendations being derived from a space of selections lying between the broad and narrow descriptions (page 18, line 22 – page 19, line 4).

## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-6, 8-9, and 11 stand rejected under 35 U.S.C. 102(b) over Payton (USP 5,790,935).

## VII. ARGUMENT

### Claims 1-6, 8-9, and 11 stand rejected under 35 U.S.C. 102(b) over Payton

MPEP 2131 states:

> "A claim is anticipated only if ***each and every element*** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The ***identical invention*** must be shown in as ***complete detail*** as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

**Summary of elements and limitations for which the Examiner has not shown a corresponding feature in the cited reference.**

Claims 1 includes modifying a first user profile based on data in a second user profile, with limitations related to this modification. The Office action has not shown where Payton teaches modifying a first user's profile based on data in a second user's profile, and also fails to show where Payton teaches the claimed limitations related to the modification of a user's profile.

Claim 5 includes selecting test-data for revising a first user profile based on data in a second user profile, and particularly, selecting test-data for material that the first user profile has insufficient data for determining whether the material would be favored or disfavored by the first user. The Office action has not shown where Payton teaches revising a first user profile based on data in a second user profile, and has not shown where Payton teaches selecting test-data based on the sufficiency of the first user profile for determining whether the user may favor or disfavor the material.

Claim 9 includes a learning engine that generates a first user profile that includes a narrow description defining target data selections (favored selections) and a broad description defining non-target data selections (everything except dis-favored selections). The Office action has not shown where Payton teaches a profile that includes a narrow description and a broad description.

**Claims 1-4**

Claim 1, upon which claims 2-4 depend, claims a method that includes modifying a first user profile responsively to data from a second user profile associated with a second user such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency of recommendations of any other data-classes, so that the first user profile is expanded in scope according to preferences stored in the second user profile.

Payton fails to teach modifying a first user profile based on a second user profile.

Payton fails to teach increasing the frequency of recommendation of a data-class without decreasing the frequency of another data-class.

Payton fails to teach expanding the scope of a first user profile according to preferences in the second user profile.

Payton teaches the use of a combination of multiple users' profiles to determine the recommendations provided to a user, but does not teach modifying the first user's profile based on the other user profiles.

The Office action fails to identify where Payton teaches modifying a user's profile based on another user's profile, and repeatedly refers to Payton's teaching of providing a recommendation based on other users' profiles. Citing the "modifying the first user profile responsively to data from a second user profile" element of claim 1, the Office action cites Payton's teaching of "recommendations from a second similar user", and fails to identify where these recommendations are used to modify the first user profile.

Payton's FIG. 7b clearly indicates the flow of Peyton's process. At 164, the user's profile is updated, based on explicit 160 and implicit 162 feedback. The updated user profile is then used to determine groups of similar users, at 166, and the profiles of these groups are used to predict the favorable/unfavorable ratings of the available material, at 168, and to produce the recommendation list, at 170. As is clearly evident in FIG. 7b, the user's profile is only updated at block 164, before the other, similar, users are determined, at 166. Although the recommendation is based

on the multiple users, the individual user profiles are only affected by the individual user's actions, at 160 and 162.

Additionally, the Office action fails to identify where Payton teaches increasing the frequency of one data-class without decreasing the frequency of another. The Office action merely states: "the combined scores are used to recommend programming". Payton is silent with regard to how the combined scores are used to determine the recommended programming, and it is likely that, absent the applicants' teachings, if one or more of Payton's users do not prefer a given data-class, the likelihood of recommending that data-class will be reduced.

As noted above, Payton fails to teach modifying a user's profile based on another's profile, and thus Payton cannot be said to teach expanding the scope of a user's profile based on another's profile.

Because Payton fails to teach modifying a first user based on a second user profile, fails to teach increasing the frequency of recommendation of a data-class without decreasing the frequency of another data-class, and fails to teach expanding the scope of a first user profile according to preferences in the second user profile, as specifically claimed in claim 1, the applicants respectfully maintain that the rejection of claims 1-4 under 35 U.S.C. 102(b) over Payton is unfounded, per MPEP 2131.

**Claims 5-6 and 8**

Claim 5, upon which claims 6 and 8 depend, claims a method that includes selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user, requesting feedback on the test-data from the first user and modifying the first user profile responsively to the feedback, wherein selecting the test-data includes selecting primarily test-data for which the first user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored.

Payton fails to teach selecting test-data for revising a first user's profile based on data from a second user's profile.

Payton fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored.

The Office action asserts that Payton teaches selecting test-data for revising a first user's profile based on data from a second user's profile at column 8, line 50 through column 9, line 26, with the statement: "the combined scores are used to recommend programming". The applicants acknowledge that Payton teaches that combined scores are used to recommend programming, but respectfully maintain that providing program recommendations is not equivalent to selecting test-data for revising a user's profile, as specifically claimed in claim 5.

Assuming in argument, however, that recommending programming is identical to selecting test-data, the applicants respectfully note that Payton fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored. The Office action cites Payton's teaching that the weighting applied to a prediction is inversely proportional to the dissimilarity of the rating between users as corresponding to the applicants' claimed primary selection of data for which the first user's profile is insufficient. The applicants fail to see how the dissimilarity of ratings is related to the first user's profile being insufficient to determine whether the test-data would be favored or disfavored. Consider, for example, the case of a first user favoring an item

and a second user disfavoring the item. In this case, the dissimilarity is high and the user's profile's sufficiency is high. Consider now the case of the second user also favoring the item. In this case, the dissimilarity is low, and the user's profile's sufficiency is still high. Consider now the case of both the first and second users' profile having insufficient favor/dis-favor information. In this case, the dissimilarity is low, and the user's profile's sufficiency is low. Finally, consider the case of the second user favoring the item. In this case, the dissimilarity is high, and the user's profile sufficiency is still low. The applicants respectfully maintain that the preceding analysis clearly indicates that Payton's dissimilarity-based selection is independent of whether a first user's profile is insufficient to determine whether the test-data would be favored or disfavored, as specifically claimed in claim 5.

Because Payton fails to teach selecting test-data for revising a first user's profile based on data from a second user's profile, and fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored, as specifically claimed in claim 5, the applicants respectfully maintain that the rejection of claims 5-6 and 8 under 35 U.S.C. 102(b) over Payton is unfounded, per MPEP 2131.

**Claims 9 and 11**

Claim 9, upon which claim 11 depends, claims a data-class recommender that includes a learning engine that selectively generates recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user; wherein the learning engine is programmed such that the first user profile includes a narrow description defining target data selections and a broad description defining non-target data selections.

Payton fails to teach a user profile that includes a narrow description defining target data selections and a broad description defining non-target data selections.

The Office action asserts that Payton's teachings of high ratings and lower ratings correspond to a narrow description and a broad description, respectively. The applicants respectfully maintain that high and low ratings are independent of narrow and broad descriptions. In the applicants' invention, for example, items in either the broad or narrow description category, or anywhere between, are generally rated high, because they are within the "version space" of favored items. That is, material in either the broad or narrow description categories will generally be rated higher than average. Material that is not contained in either the broad or narrow description categories will generally be rated lower than average.

Assuming in argument that a correspondence between ratings and descriptions may exist, the Office actions' asserted correspondence between a low rating and a broad description, and a correspondence between a high rating and a narrow description is easily contradicted by the example of a user who likes most items and only dislikes a few, such as a user who "likes everything except sports", or "everything but soaps". In these cases, a low rating corresponds to a narrow description (sports, soaps), and a high rating corresponds to a broad description (everything else).

Because Payton fails to teach a profile that includes a narrow description defining target data selections and a broad description defining non-target data selections, as specifically claimed in claim 9, the applicants respectfully maintain that

the rejection of claims 9 and 11 under 35 U.S.C. 102(b) over Payton is unfounded, per MPEP 2131.

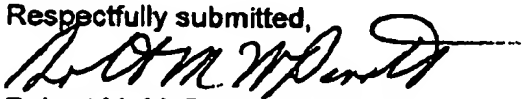
## CONCLUSIONS

Because Payton does not teach modifying a first user based on a second user profile, fails to teach increasing the frequency of recommendation of a data-class without decreasing the frequency of another data-class, and fails to teach expanding the scope of a first user profile according to preferences in the second user profile, as specifically claimed in claim 1, the applicants respectfully request that the Examiner's rejection of claims 1-4 under 35 U.S.C. 102(b) be reversed by the Board, and the claims be allowed to pass to issue.

Because Payton does not teach selecting test-data for revising a first user's profile based on data from a second user's profile, and fails to teach primarily selecting the test-data for which the first user's profile is insufficient to determine whether the test-data would be favored or disfavored, as specifically claimed in claim 5, the applicants respectfully request that the Examiner's rejection of claims 5-6 and 8 under 35 U.S.C. 102(b) be reversed by the Board, and the claims be allowed to pass to issue.

Because Payton does not teach generating a profile that includes a narrow description defining target data selections and a broad description defining non-target data selections, as specifically claimed in claim 9, the applicants respectfully request that the Examiner's rejection of claims 9 and 11 under 35 U.S.C. 102(b) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted,



Robert M. McDermott, Attorney
Registration Number 41,508
804-493-0707

## CLAIMS APPENDIX

1. A method comprising:

receiving feedback from a first user scoring examples falling into various data-classes;

refining a first user profile associated with the first user responsively to the feedback; and

modifying the first user profile responsively to data from a second user profile associated with a second user such that a frequency of recommendations of at least one data-class is increased without decreasing a frequency of recommendations of any other data-classes, so that the first user profile is expanded in scope according to preferences stored in the second user profile.

2. The method of claim 1, wherein

the first user profile includes a specialized target description of favored data-classes, and

modifying the first user profile includes generalizing the specialized target description such that it encompasses at least one specialized target description of the second user profile.

3. The method of claim 2, wherein

modifying the first user profile includes substituting at least a union of specialized descriptions of the first user profile and the second user profile for the specialized description of the first user profile.

4. The method of claim 1, wherein

modifying the first user profile includes substituting at least a union of specialized descriptions of the first user profile and the second user profile for the specialized description of the first user profile.

5. A method comprising:

receiving feedback from a first user scoring examples falling into various data-classes;

refining a first user profile associated with the first user responsively to the feedback;

selecting test-data for revising the first user profile responsively to data from at least a second user profile associated with a second user; and

requesting feedback on the test-data from the first user and modifying the first user profile responsively to the feedback;

wherein

selecting the test-data includes selecting primarily test-data for which the first user profile is insufficient for the recommender to determine whether the test-data would be favored or disfavored.

6. The method of claim 5, wherein

selecting the test-data includes selecting only test-data for which feedback incorporated in the first user profile increases a discriminating power of the first user profile.

7 (Canceled)

8. The method of claim 5, wherein

selecting the test-data includes filtering a universe of data choices through a specialized description of a concept space.

9. A data-class recommender, comprising:

a learning engine;

a user interface device operably coupled to the learning engine;

the learning engine being operably coupled to a data source containing descriptions of data selections;

the learning engine being programmed to:

receive, through the user interface device, feedback from a first user evaluating the data selections;

progressively generate a description of data selections that are favored and disfavored by the first user based on the feedback, thereby generating a first user profile;

generate recommendations of data selections for the first user responsively to the first user profile; and

selectively generate recommendations of data selections for the first user responsively to the first user profile and at least a second user profile of a second user;

wherein

the learning engine is programmed such that the first user profile includes

a narrow description defining target data selections and

a broad description defining non-target data selections,

the recommendations being derived from a space of selections lying between the broad and narrow descriptions.

10. (Canceled)

11. The recommender of claim 9, wherein

the learning engine is programmed to:

compare a level of narrowness in the narrow description to a threshold such that the first user profile results in recommendations embracing a range of target data that is narrower than the threshold, and

selectively generate recommendations of data selections for the first user responsively to the first user profile and at least a second user profile responsively to a result of comparing the level with the threshold.

## EVIDENCE APPENDIX

No evidence has been submitted that is relied upon by the appellant in this appeal.

## RELATED PROCEEDINGS APPENDIX

Appellant is not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.